

## **SMALL PELAGIC FISH MARKET IN THE SOUTH OF SICILY: LINKAGES BETWEEN CATCH VOLUME AND MARKET PRICE**

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### **Extended abstract**

Along the southern Sicilian coast (Central Mediterranean Sea), Sciacca harbor is the most important landing port for small pelagic fish species (mainly anchovies and sardines) [1, 2]. This landing side accounts for about 2/3 of total catch in GFCM-FAO Geographical Sub-Area 16 (South of Sicily), where two operational units (OU) are presently active: purse seiners and pelagic pair trawlers [3]. The GSA16 fleet is composed from 46 units (31 purse seiners and 15 pelagic pair trawlers; Community Fishing Fleet Register, <http://ec.europa.eu/fisheries/fleet/index.cfm>). In both OUs, anchovy represents the main target species due to the higher market price.

Although small pelagic fishes are locally quite appreciated for direct fresh consumption, landings are always totally absorbed by Sciacca transformation (canning) companies' high demand. Consequently, local consumption of fresh fish is relatively low, also because small pelagic fish are considered "poor" when compared to the wide fish variety in Sciacca market.

This study analyzes the links between anchovy landings by pelagic pair trawlers and their market price from daily catch/price data collected in Sciacca harbor throughout the period March 1999 - December 2013.

### **METHODOLOGY**

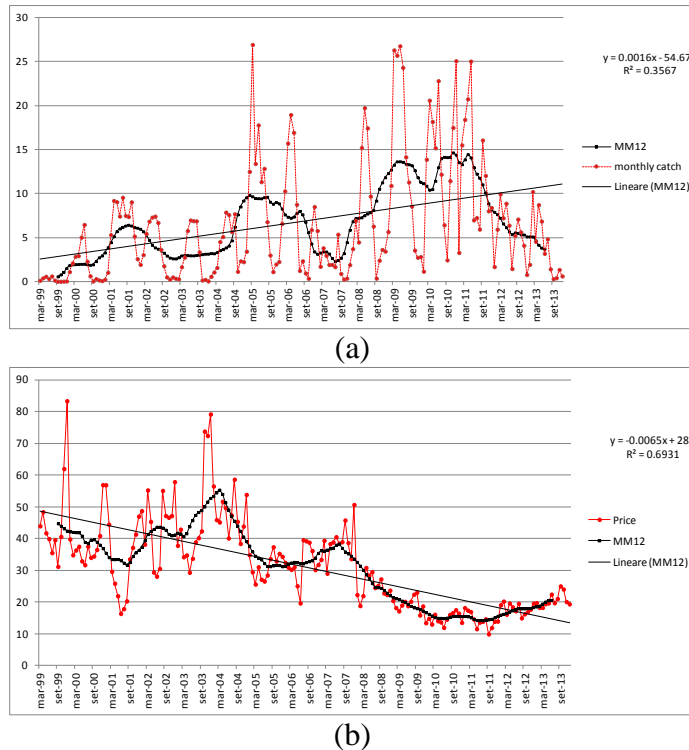
Catch/price data used for the present study were collected on daily basis by on-deck interviews. Average monthly values for both the time series were firstly evaluated to the aims of the present study.

Inflation adjustment was firstly applied on the price time series (ISTAT, 2014, <http://www.istat.it/it/archivio/30440>), as during the considered period the rise in the inflation index was +38.4%. Linear regression analysis between landings and market price was applied in order to investigate the relationship between the two series.

### **RESULTS**

The time series show a seasonal signal more evident in landings series (most probably linked to the ecology of the species, which spawns in coastal areas from March to September, [1, 4]), and significant trends, increasing for landings and decreasing for prices.

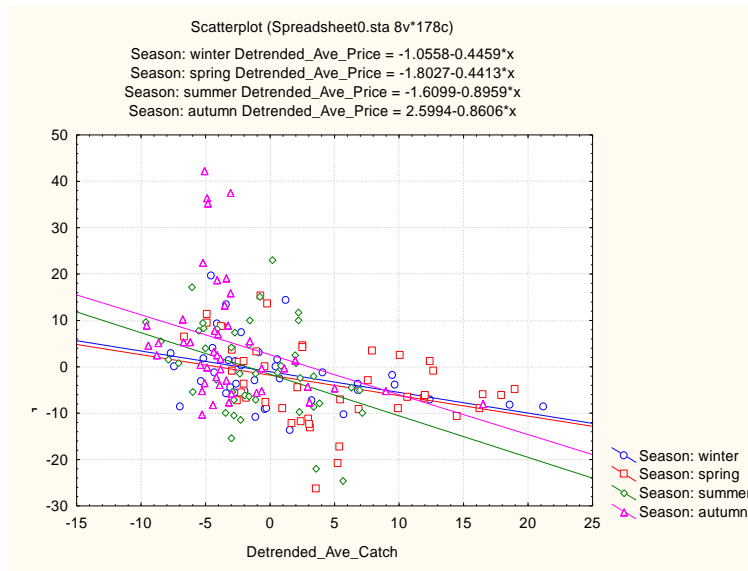
In Figure 1, a 12-month moving average is superimposed, in order to emphasize the general evolution in the series and better investigate on changes in the relationship between prices and landings over time. In particular, the moving average is able to remove seasonal signals from both of the series. The two series appear to be generally anti-correlated, and an apparent 6-7 year cycle in landings is also evidenced.



**Fig. 1: Average monthly prices (a; in euro, per 10 kg box) and landings (b; in tons) series evolution**

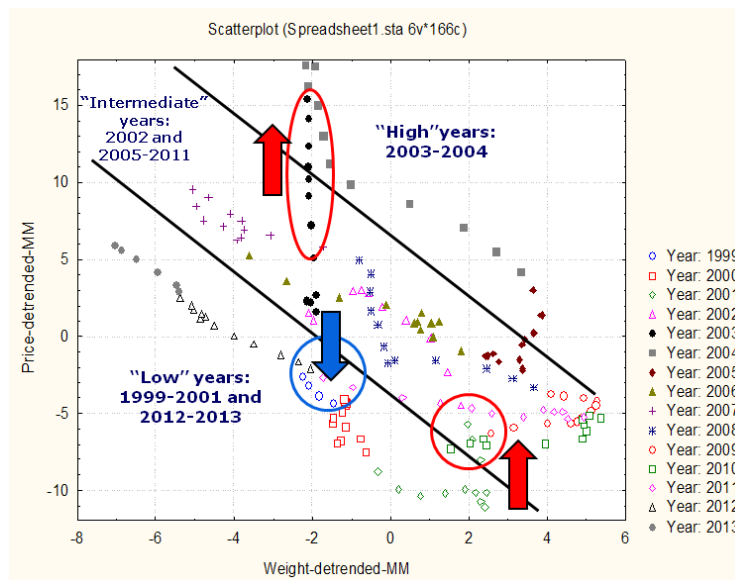
As both the landings and the market prices exhibit a significant trend, in order to investigate on their relationship the two series were detrended before further analysis.

The relationship between detrended landings and prices evidenced the presence of elasticity for prices, most marked during summer and autumn (Figure 2).



**Fig. 2: Detrended average price vs. average catch**

Figure 3 shows the relationship between the 12-month moving averages of the two time series (prices in vertical axis and landings in horizontal axis). It is possible to note three distinct “states” in the relationship.



**Fig.3: Relationship between the 12-month moving averages of the two time series**

The first state, in the lower left corner, characterizes the first and the last years of the time series (1999-2001 and 2012-2013, respectively), when prices were relatively low. Most of the points fall in the intermediate level, characterizing most years from 2002 to 2011, with the only exception of years 2003-2004, when prices were relatively higher in relation to landings.

The first transition from the lower state to the intermediate state corresponds to the change in currency from the Italian lira to Euro (year 2002). The sharp transition from the intermediate state to the upper state appears to be a further attempt, extended just for a couple of years (from mid 2003 to mid 2005) to increase profitability by increasing prices.

Finally, the last recent transition (in late 2011) from the intermediate to the lower state corresponds to the start of the negative effects of the global crisis on the Italian economy.

## CONCLUSIONS

Sciaccia fisheries represent a good example to understand and interpret price elasticity dynamics in relation to fish production and as a response to the economic situation and trends.

The results of this study show, on one hand, the importance of fish production levels in modulating market prices. Conversely, the potential relevance of the price lever in modulating fish production demand is also evidenced. This effect may be used to manage fish consumption, e.g. to the aim of fostering the substitutions from unhealthy to healthy food such as blue fish. However, further research is necessary to find out more of the market and social elements that can also have an impact on price elasticity

## REFERENCES

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